



MEMORANDUM

TO: The Idaho Department of Environmental Quality

FROM: Gary G. Allen 
Elizabeth M. Donick 

RE: Interpretation of IAC Section 58.01.02.055.04 Regarding Metals Limits in Draft NPDES Permits for the Hayden Area Regional Sewer Board and the City of Post Falls

DATE: February 29, 2012

On January 18, 2012, the Idaho Department of Environmental Quality ("IDEQ") completed a draft water quality certification (the "Draft 401 Certification") of the Hayden Area Regional Sewer Board's ("HARSB") draft National Pollution Discharge Elimination System ("NPDES") permit pursuant to Section 401(a)(1) of the Clean Water Act ("CWA"), 33 U.S.C. Section 1341(a)(1), and Idaho Code Sections 39-101 *et seq.* and 39-3601 *et seq.* With regard to the Draft 401 Certification and HARSB's draft NPDES permit, IDEQ has offered a preliminary interpretation of Idaho Administrative Code ("IAC") Section 58.01.02.055.04 (Section 55.04) that requires no increase in the mass loading of lead, cadmium, zinc and phosphorus, the constituents for which the Spokane River is water quality limited and for which no Idaho TMDL has been adopted. EPA and IDEQ address these limits in various ways in the draft NPDES permit and the Draft 401 Certification. The draft NPDES permit limits HARSB's discharges of lead and zinc to the mass loads permitted in HARSB's 1999 permit, although these discharges are allowed year-round as compared to a seasonal discharge in HARSB's current permit. The Draft 401 Certification proposes to add cadmium and phosphorus mass limits based on current actual loading.

This memorandum outlines alternative interpretations of Section 55.04 that focus on concentration as opposed to mass. We believe these interpretations comply with the law and do not require the imposition of effluent limitations based on currently permitted mass limits or current actual mass loading and do not require any seasonal limitation on loading. The memorandum also outlines our concerns regarding the legality of limiting the discharge to the currently permitted mass limits or current actual mass loading.

Questions Presented

1. Can Section 55.04 be lawfully interpreted to allow effluent mass limitations for lead, cadmium and zinc in the HARSB and City of Post Falls ("Post Falls") NPDES permits to be set based on the concentration allowed by the water quality criteria end-of-pipe multiplied by the current design flow?
2. Can Section 55.04 be lawfully interpreted to set effluent mass limitations for lead, cadmium and zinc in the HARSB and Post Falls NPDES permits at the existing actual or permitted discharge levels?
3. Is HARSB's phosphorus discharge subject to an "equivalent process" comparable to a TMDL that would exempt it from Section 55.04?

Short Answers

1. Yes. Section 55.04 can be read to allow increased mass loading at concentrations that comply with the water quality criteria where the criteria regulate concentration instead of mass. Here, the existing effluent limitations for HARSB and Post Falls are set at the water quality criteria without mixing zones. Because the concentration of lead, cadmium or zinc is not allowed to increase above the criteria, there is no "increased discharge of pollutants" to trigger Section 55.04. Further, the "criteria end-of-pipe" limitations and reasonable potential analysis performed by EPA constitute "interim measures" that "ensure that discharges of pollutants of concern remain constant or decrease within the watershed." Draft 401 Certification at 1.
2. Likely no. The interpretation of Section 55.04 in the Draft 401 Certification and the draft NPDES permits likely violates Idaho Code Section 39-3601, which states that "the rules promulgated under this chapter [shall] not impose requirements beyond those of the federal clean water act." Idaho Code § 39-3601 (emphasis added). Further, imposing limitations based on actual or currently permitted mass loading appears to be arbitrary because the mass loading is irrelevant to compliance with the water quality criteria except as it relates to concentration.
3. Yes. The phosphorus limits in HARSB and Post Falls' draft NPDES permits were developed using on a reasonable potential analysis based on the State of Washington's TMDL for dissolved oxygen for the Spokane River (the "Washington DO TMDL"). This TMDL strictly regulates phosphorus discharges and seems clearly to qualify as an equivalent process more than sufficient to protect Idaho waters from nuisance aquatic growth.

Analysis

HARSB and Post Falls operate their facilities under NPDES permits issued in 1999 that include effluent limitations for lead and zinc, and include a monitoring requirement for cadmium as follows:

	HARSB	Post Falls
Lead	Average Monthly Limit – 2.66 µg/L, 0.033 lbs/day Maximum Daily Limit – 3.76 µg/L , 0.047 lbs/day	Average Monthly Limit – 2.05 µg/L, 0.059 lb/day Maximum Daily Limit – 3.79 µg/L , 0.110 lb/day
Cadmium	Monthly monitoring requirement - 1/month	Monthly monitoring requirement - 1/month
Zinc	Average Monthly Limit – 88.2 µg/L, 1.10 lbs/day Maximum Daily Limit – 112.0 µg/L , 1.4 lbs/day	Average Monthly Limit – 84.3 µg/L, 2.45 lb/day Maximum Daily Limit – 115 µg/L , 3.34 lb/day

In the 1999 permits, the EPA established “criteria end-of-pipe” water quality-based effluent limits for lead and zinc. EPA also applied criteria at the end-of-pipe when it conducted a reasonable potential analysis for cadmium and determined the discharges do not have a reasonable potential to cause or contribute to excursions above water quality standards for cadmium. The 1999 concentration limits are set at the water quality standards without a mixing zone because ambient water quality exceeds the standards so there is no additional loading capacity. IAC Section 58.01.02.010.54 defines loading capacity as “[t]he greatest amount of pollutant loading that a water can receive without violating water quality standards.” The mass limits simply multiply the allowable concentration by the design capacity declared in the 1999 permit application, with appropriate averaging calculations. The 1999 permits expired in 2004 and are subject to administrative extensions until the revised permits are issued.

EPA and IDEQ are collaboratively working on revising the NPDES permits for HARSB and Post Falls. In the Draft 401 Certification, IDEQ explains that the Spokane River is listed in the 2010 Integrated Report as “high priority” for TMDL development, and that this assessment unit of the Spokane River is not supporting its cold water aquatic life beneficial use. Total phosphorus, cadmium, lead and zinc concentrations have been detected in the Spokane River above the criteria set to protect cold water aquatic life uses.

IDEQ then sets forth a brief analysis of Section 55.04 stating that “DEQ must ensure that discharges of pollutants of concern remain constant or decrease within the watershed.” Draft 401 Certification at 1. IDEQ’s interpretation is that, in this context, “load” means mass loading. EPA follows IDEQ’s analysis in the draft NPDES permit, explaining that effluent limits for lead and zinc will remain at the same level as the 1999 permit, and proposes to add an average monthly mass effluent limit for cadmium of 0.027 µg/L, 0.00 lbs/day, per IDEQ’s instructions in the Draft 401 Certification. In calculating this new cadmium limit, IDEQ states that it averaged pollutant concentrations and loads from

the 2006-2011 daily monitoring reports. Draft 401 Certification at 2. We read this to mean the limit is based on actual flows, not the 1999 permitted flows. The limits for lead and zinc in the current permit, issued in 1999, were derived using the design flows upon which the 1999 permit applications were based. The design flows of the facilities have increased in the current permit renewal applications, but IDEQ and EPA do not propose to increase the allowable mass loading, based on IDEQ's interpretation of Section 55.04.

The Draft 401 Certification further proposes effluent limitations for phosphorus during the January and February timeframe, the only months of the year when phosphorus limits are not required by EPA's reasonable potential analysis based on the Washington DO TMDL.

The interpretations of Section 55.04 in the Draft 401 Certification and the HARSB draft NPDES permit create significant problems for HARSB and Post Falls because the imposition of mass-based limits, set below design flows, will eventually create an effective cap on growth. As far as we can tell, there would be no environmental benefit from these limits.

The capital and operating costs associated with metals treatment are extremely high and likely are unaffordable given the significant expenses HARSB and Post Falls will already incur in complying with the phosphorus, five day carbonaceous biochemical oxygen demand ("CBOD₅") and ammonia limits in the draft NPDES permits. In order to comply with the mass limits for lead, cadmium and zinc, HARSB and Post falls may be forced to limit sewer connections to the detriment of their respective communities, and would have to assess other drastic possibilities in determining how to comply with these limits.

1. It is reasonable to interpret Section 55.04 to regulate concentration rather than mass in the context of the lead, cadmium and zinc water quality criteria.

Section 55.04 contains the requirements for discharges to high priority water quality limited waters and states as follows:

04. High Priority Provisions. Until a TMDL or equivalent process is completed for a high priority water quality limited water body, new or increased discharge of pollutants which have caused the water quality limited listing may be allowed if interim changes, such as pollutant trading, or some other approach for the pollutant(s) of concern are implemented and the total load remains constant or decreases within the watershed. Interim changes shall maximize the use of cost effective measures to cap or decrease controllable human-caused discharges from point and nonpoint sources. Once the TMDL or equivalent process is completed, any new or increased discharge of causative pollutants will be allowed only if consistent with the approved TMDL. Nothing in this section shall be interpreted as requiring best management practices for agricultural operations which are not adopted on a voluntary basis.

IAC § 58.01.02.055.04 (emphasis added).

We see two interpretations of Section 55.04 that do not require retaining the mass limits from the 1999 permits or basing mass limits on the current levels of actual facility flows. We recognize that mass limits are required for the NPDES permits. However, these are normally based on the design flows in the current permit applications, and not on current flows or design flows that happened to be in the 1999 permit applications.

The first interpretation is that discharging increased mass at concentrations that comply with the water quality criteria is not an “increased discharge of pollutants.” For all practical purposes, mass loading is irrelevant to the water quality standards for these constituents. The applicable water quality criteria for protection of aquatic life regulate only the maximum concentrations of lead, cadmium and zinc in the water column, both for acute criteria and chronic criteria. IAC § 58.01.02.210.01-03. Unless otherwise specified in the rules, the water quality rules defines acute criteria as, “the maximum instantaneous or one (1) hour average concentration of a toxic substance or effluent which ensures adequate protection of sensitive species of aquatic organisms from acute toxicity due to exposure to the toxic substance or effluent.” IAC § 58.01.02.10.03 (emphasis added). Chronic criteria are defined in the water quality rules as “the four (4) day average concentration of a toxic substance or effluent which ensures adequate protection of sensitive species of aquatic organisms from chronic toxicity due to exposure to the toxic substance or effluent.” IAC § 58.01.02.10.14 (emphasis added). In other words, mass is only relevant in relation to concentration. Thus, an increase in mass is only an “increased discharge of pollutants” if the concentration also increases. HARSB and Post Falls do not contribute to the ambient metals problems in the Spokane River any more by discharging 1000 cubic feet per second (“CFS”) of water that complies with the standard than by discharging 1 CFS. In fact, the more water HARSB and Post Falls discharge that is in compliance with the water quality standards, the better the water quality becomes in the Spokane River.

In addition, HARSB’s discharges of water at criteria end-of-pipe comply with Section 55.04 because “interim changes, such as pollutant trading, or some other approach for the pollutant(s) of concern [have been] implemented and the total load remains constant or decreases within the watershed.” IAC § Section 58.01.02.055.04. The current, strict effluent limitations for lead and zinc in the HARSB and Post Falls permits, in connection with EPA’s supporting reasonable potential analysis outlined in the corresponding fact sheets, are enforceable “interim changes” ensuring that the “total load remains constant or decreases within the watershed.” The term “load” is not defined in IDEQ’s water quality regulations and there is no requirement that it refer only to mass. Further, we see no basis to limit load to mean “mass” where mass is irrelevant to compliance with the water quality criteria except as a proxy for concentrations.

2. Section 55.04 does not comply with Idaho law to the extent it requires effluent mass limitations based on the 1999 design flows or existing actual flows.

Idaho law does not require IDEQ to interpret Section 55.04 to limit the mass of lead, cadmium and zinc discharges in HARSB’s NPDES permit to existing design flows or actual flows as long as concentrations are appropriately limited. To the contrary, Idaho law appears to prohibit this interpretation.

Nothing in Idaho law requires an interpretation of Section 55.04 that imposes metals mass limits based on currently permitted flows or current actual flows. The direct implementing statute for Section 55.04 is Idaho Code Section 39-3610. This section states, in pertinent part:

The director shall assure, in a manner consistent with existing statute or rules, that for each category of water body, as described in section 39-3609(1) through (3), Idaho Code, the following limitations shall apply:

- (1) For waters in the “high,” category a total maximum daily load or equivalent process as described in this chapter shall be undertaken. Provided however, that nothing in this section shall be interpreted as requiring best management practices for agricultural operations which are not adopted on a voluntary basis.

Idaho Code § 39-3610 (1). This statute, aside from clearly requiring a TMDL or equivalent process for high priority water bodies, does not require, nor does it include any language suggesting an intention to require, that Section 55.04 imposes a no increase in mass loading requirement. Further, there is no other provision in the Idaho Surface Water Quality Act or Idaho law that directly requires the imposition of “no increased load” provisions or the interpretation of the term “load” to refer only to “mass.”

Consistent with the CWA, Idaho Code Section 39-3603 requires that “[t]he existing instream beneficial uses of each water body and the level of water quality necessary to protect those uses shall be maintained and protected.” I.C. §39-3603(1)(a). This provision provides authority for IDEQ to “protect the status quo” and prohibit increased loads in impaired water bodies when a TMDL has yet to be established. However, the Draft 401 Certification provides no explanation of how increased mass loads at concentrations that comply with the water quality standards have any adverse impact on beneficial uses, and we do not expect any adverse impact could be shown.

In fact, Idaho law appears to prohibit IDEQ from imposing mass limits that are beyond the scope of the CWA or that exceed the requirements of federal law. Idaho Code § 39-3601 explains the legislature’s intent for Idaho water quality standards and the related rules promulgated under the Idaho Code, and states, in relevant part:

It is the intent of the legislature that the state of Idaho fully meet the goals and requirements of the federal clean water act and that the rules promulgated under this chapter not impose requirements beyond those of the federal clean water act.

I.C. § 39-3601. This language expressly prohibits the “rules” governing discharges to impaired water bodies from imposing requirements beyond what federal law requires.

Nothing in the Clean Water Act mandates the proposed mass limits. The closest federal regulatory provision is 40 C.F.R Section 131.12, which mirrors Idaho Code Section 39-3603 and requires protection and maintenance of beneficial uses. Further, no court has interpreted the CWA to impose requirements analogous to the mass limits in the Draft 401 Certification and the draft HARSB NPDES permit. The United States Court of Appeals for the Ninth Circuit addressed issues surrounding discharges into a water body already in excess of its standards in *Friends of Pinto Creek v. U.S.E.P.A.*, 504 F.3d

1007 (9th Cir. 2007). However, *Pinto Creek* does not inform the analysis of Section 55.04 because *Pinto Creek* specifically addressed the application of 40 C.F.R. Section 122.4(i), which applies only to new dischargers. *Id.* at 1011-1012. The regulation expressly states that “[n]o permit may be issued ... (i) [t]o a new source or a new discharger, if the discharge from its construction or operation will cause or contribute to a violation of water quality standards.” 40 C.F.R. § 122.4(i) (emphasis added). HARSB and Post Falls are current existing dischargers in the process of working towards renewed permits and do not fall under the purview of 40 C.F.R. Section 122.4(i). Thus, *Pinto Creek* does not apply.

The fact that the CWA does not require a prohibition on increased mass loading is reinforced by several additional points. First, the EPA’s draft 2007 Fact Sheets for the HARSB and Post Falls permits increase the allowable mass for Post Falls and HARSB based on design flows. For example, in addition to acknowledging the issue that there is no approved TMDL in place for the relevant sections of the Spokane River, EPA explains the basis for increased mass limits in the 2007 HARSB Fact Sheet and states “mass limitations for certain pollutants,” have been increased “because the design flow of the facility has increased.” HARSB 2007 Fact Sheet at 20. EPA further explains that mass limits are back-calculated from the concentration limits based on the design flow of the facility. *Id.* at 21.

Second, the NPDES permits issued in Washington do not include mass-based limits comparable to what IDEQ is proposing to require in the 401 Certification. Washington Department of Ecology’s 1999 Spokane River Dissolved Metals TMDL (the “Spokane Metals TMDL”) indicates “a concentration measure is appropriate,” for dissolved metals in the Spokane River, “because the relationship between the effluent-based criterion and the receiving water quality hold for all effluent flow rates and critical conditions in the Spokane River.” Spokane Metals TMDL at 2. The Spokane Metals TMDL further described the wasteload allocation as “derived by either meeting aquatic life toxicity criteria at effluent hardness at the end-of-pipe, or based on maintaining existing concentrations of metals in effluent using performance based limits with an added 10 percent buffer,” and load allocation as “the concentration required to meet the chronic criterion at the outlet of Lake Coeur d’Alene.” *Id.* at 2.

Finally, our view is that an interpretation of Section 55.04 that limits mass loading to prior design flows or current actual flows is simply arbitrary. A discharge that complies with the water quality standards for lead, cadmium and zinc at a lower flow has no more adverse impact on water quality than a discharge at a higher flow, notwithstanding that the mass of the regulated constituents increases. Since there is no nexus between mass and compliance with the water quality standards that is not fully addressed by concentration limits, we see no basis to calculate mass-based effluent limits for lead, cadmium and zinc except based on design flow.

HARSB and Post Falls look forward to discussing these significant concerns with IDEQ and developing a resolution of these. We have presented what we believe are acceptable alternatives, but Post Falls and HARSB are open to other approaches that reach an acceptable result.

3. Section 55.04 does not require additional phosphorus limits because the phosphorus limits in the HARSB and Post Falls NPDES permits were developed based on the Washington DO TMDL, which is an “equivalent process” to an Idaho nutrient TMDL.

Section 55.04 applies “[u]ntil a TMDL or equivalent process is completed for a high priority water quality limited water body.” IAC § 58.01.02.055.04. The draft NPDES permits for HARSB and

Post Falls contain extremely strict effluent limitations for phosphorus, ammonia and CBOD₅ based on the Washington DO TMDL. Strictly speaking, EPA is not applying the TMDL to the Idaho dischargers, but is applying TMDL-based limits based on a reasonable potential analysis. Thus, phosphorus discharges clearly are subject to an "equivalent process" to a TMDL. The Washington TMDL does not regulate phosphorus discharges in November and December only because extensive modeling showed that discharges in this timeframe had no impact on dissolved oxygen levels downstream. Idaho water quality standards also recognize the importance of seasonality of nutrient discharges, as the Idaho narrative nutrient criteria require that "[s]urface waters of the state shall be free from excess nutrients that can cause visible slime growths or other nuisance aquatic growths impairing designated beneficial uses." IAC § 58.01.02.200.06. There is no reason to believe that the requirements EPA is imposing to address dissolved oxygen impacts in Lake Spokane are not sufficient to address potential nutrient impacts in Idaho.